

domains. Problems with physical component of QoL increased with BMI increase, while for “pain/discomfort” and “anxiety/depression”, normal weight and severe obese people complained more than overweight and obese people. **CONCLUSIONS:** obesity is expensive for the health care system and society and compromises individuals’ QoL. Policy makers should pay attention to identification, promotion and implementation of programs aimed at preventing obesity.

OSTEOPOROSIS

OSTEOPOROSIS—Cost Studies

POS1

COST-EFFECTIVENESS OF RISENDRONATE THERAPY COMPARED TO ALENDRONATE IN POST-MENOPAUSAL WOMEN AT HIGH RISK OF OSTEOPOROTIC FRACTURE: A TAIWAN ANALYSIS

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OBJECTIVE: Hip fracture rates in Taiwan have been reported to be higher than other Asian countries. The objective of this analysis was to assess the cost-effectiveness of risendronate compared to alendronate in high-risk osteoporotic patients in Taiwan. **METHODS:** A fracture-incidence based Markov model of osteoporosis, where patients transition across states, was used to estimate cost per fracture averted and cost per QALY gained. The population included 1000 women aged 65 years with low bone density and previous vertebral fracture, treated over a lifetime with either risendronate or alendronate. Model inputs specific to Taiwan included general population hip fracture rates, mortality rates, health utilities, and relative risk reduction of fracture with therapy (from published studies). The launch price of risendronate was anticipated as 20% higher than alendronate (risendronate: 16,394 NT\$/year; risendronate 13,662 NT\$/year). Vertebral fracture rates were not available for Taiwan, thus incidence rates were based on US ratios of hip to vertebral fracture. The cost of fracture was included only for first year after fracture since chronic treatment is not routine in Taiwan. **RESULTS:** There were 58 fewer hip fractures, 35 fewer vertebral fractures and 52 more QALYs with risendronate compared to alendronate. The fracture costs were 15% lower for patients treated with risendronate, however total costs (including drug costs) were higher (259,358 NT\$ [risendronate] vs. 227,296 NT\$ [alendronate]). The incremental cost was 343,225 NT\$ (8400€) per any fracture averted, 552,787 NT\$ (13,500€) per hip fracture averted, and 617,934 NT\$ (15,100€) per QALY gained for risendronate compared to alendronate. **CONCLUSIONS:** Risendronate treatment for high-risk osteoporotic women may represent a cost-effective strategy for improving care of patients in Taiwan, despite the fact that there are fewer downstream costs for treatment of chronic fracture-related disability.

POS2

CLINICAL AND ECONOMIC IMPACT OF RISEDRONATE TREATMENT FOR POST-MENOPAUSAL OSTEOPOROSIS IN FRANCE

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OBJECTIVE: Osteoporosis and its related fractures are a major source of illness and costs. Approximately 2 million post-

menopausal women have osteoporosis in France, resulting in an annual cost of 1€ billion. This study assessed the clinical and economic impact of risendronate therapy in a population of women with post-menopausal osteoporosis (PMO) using a computer simulation model. **METHODS:** A fracture incidence based Markov model of osteoporosis, where patients transition across outcome states over time, was used to estimate the incremental cost per fracture prevented and the cost per QALY gained. The analysis was conducted for a cohort of women aged 70 years with low bone mineral density and prevalent vertebral fracture. The impact of risendronate was assessed over 10 years, with patients treated for the first 5 years. Analyses used French epidemiological and cost data (from published literature). Relative risk reductions with risendronate were set at 60% for hip fracture and 41% for vertebral fracture. **RESULTS:** When added costs are expressed per unit of benefit gained, the results were approximately 15,861€ per hip fracture prevented and 4351€ per QALY gained. Without treatment, 760 radiographic vertebral fractures and 104 hip fractures occurred in a cohort of 1000 patients. Treatment with risendronate reduced the fractures occurring during the treatment period, resulting in a smaller number of fractures over 10 years: 604 vertebral fractures and 77 hip fractures. If the analysis were extended to the entire PMO population in France, treatment with risendronate could result in a reduction of 312,000 vertebral fractures and 54,000 hip fractures over 10 years. **CONCLUSIONS:** Analysis on a population level demonstrates the magnitude of fractures and the cost savings that could be averted among French women. Using country-specific data, simulation models can provide realistic estimates of the impact of disease and treatment costs in a population.

POS3

TREATMENT COSTS AND DISEASE BURDEN OF PATIENTS WITH PAGET'S DISEASE

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OBJECTIVES: This study assesses disease burden and treatment costs in patients with Paget's Disease (PD) compared with a matched comparator group (MC). **METHODS:** This is an observational study using 2001–2002 MarketScan Research databases (MEDSTAT, Ann Arbor, MI), which consist of medical claims, prescriptions and encounter data on 2 million active and retired USA employees. Details include age, gender, drugs prescribed, medical services rendered, ICD-9 diagnostic codes and costs. We linked annual files to create a longitudinal panel with 24 months of observation. Persons with PD were identified by ICD-9 code 731.0. A MC was selected using gender, age and risk adjustment score, which was derived from a DCG/HCC classification system based on presence of 189 medical conditions. In this analysis, we calculated the prevalence of 30 conditions linked to PD and total costs for all medical care. The prevalence of co-morbidities and health care costs were compared in PD and MC, and differences tested using chi-square and t-tests, as appropriate. **RESULTS:** Our study identified 488 individuals, 244 with PD and 244 matched comparators (MC). The average age was 72.7 years; 50.8% were female. Largest differences in co-morbidities detected between PD patients and MC were: pathological fractures (4.9% vs. 0.4%), heart murmurs (3.3% vs. 0.4%), fractures of femur other than neck (2.9% vs. 0.4%), spinal stenosis (2.5% vs. 0.4%), hypercalcemia (1.6% vs. 0.4%), and bone neoplasms (7.8% vs. 2.5%), respectively. Annual per patient outpa-

tient costs were significantly higher in PD patients (PD \$10,687 vs. MC \$8,083 ($p < 0.05$)), especially associated with compression fractures, heart murmurs, and spinal stenosis. Inpatient costs (PD \$7045 vs. MC \$7514), and prescription costs (PD \$5312 vs. MC \$4844) were comparable. **CONCLUSIONS:** This study is the first to link higher treatment costs with increased prevalence of co-morbidities associated with PD.

POS4

COST-EFFECTIVENESS OF BONE STIMULATORS IN THE CONSERVATIVE TREATMENT OF STABLE NONUNION FRACTURES

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OBJECTIVES: The cost of treating fractures has a significant impact on Medicare expenditures, totalling in the billions of dollars annually. The expected cost of treatment for electrical and ultrasound bone stimulators in the concomitant conservative treatment of stable nonunion fractures was assessed to identify the least costly stimulator. **METHODS:** Treatment pathways for five different bone stimulators—Exogen®, Physio-Stim® Lite, OL1000 Bone Growth Stimulator, OrthoPak®, and EBI Bone Healing System®—were modelled using a decision tree (TreeAge Data v3.0.13). Treatment failures were assumed to require surgery. Probabilities of treatment success came from published literature, manufacturers' data, and patient registry data. Cost data came from published literature and Durable Medical Equipment Regional Carriers (DMERCs). For each stimulator, the expected cost of treating a nonunion fracture was calculated by folding back the decision tree. One-way sensitivity analyses were performed by varying all probabilities by ± 0.20 and all costs by $\pm 50\%$. A Monte Carlo simulation was conducted to determine the optimal bone stimulator for a hypothetical cohort of 10,000 patients. The analysis was undertaken from the perspective of United States Centers for Medicare and Medicaid Services. **RESULTS:** Exogen® had the lowest expected cost (\$6610), followed by Physio-Stim® Lite (\$8714). Sensitivity analyses demonstrated expected costs were sensitive to the probability of success: Exogen® would have the lowest expected cost if its probability of success were at least 0.745, while OL1000 would have the lowest expected cost if its probability of success were at least 0.84. The Monte Carlo simulation showed that Exogen® was the optimal stimulator for 85% of patients, Physio-Stim® Lite for 14%, and EBI Bone Healing System® for 1%. **CONCLUSIONS:** Exogen® was the least costly bone stimulator for conservatively treated nonunion fractures. Public insurers should consider the cost benefits of expanding coverage for Exogen® to include concomitant conservative treatment of stable non-union fractures.

POSS

MEDICO-ECONOMIC EVALUATION OF VERTEBRAL FRACTURE IN OSTEOPOROTIC POSTMENOPAUSAL WOMEN

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OBJECTIVES: To assess the medical management and cost of rachialgia in untreated osteoporotic postmenopausal women and identify the cost induced by vertebral fracture. **METHODS:** EMERAUDE was a multicenter, prospective, observational study over 6 months. A total of 113 rheumatologists enrolled 427 non-

treated osteoporotic patients between 65 and 85 years-old suffering from thoracic and/or lumbar rachialgia. A DEXA Bone Mineral Density measurement and spine x-rays were performed at the beginning of the study. A central reading of x-rays differentiated patients with or without vertebral fracture. Clinical data, medical consumptions and management care were recorded. **RESULTS:** We report results about the first 195 patients followed during three months. The mean age of patients was 74 years. A total of 50.3% of patients had a vertebral fracture. Patients with vertebral fracture were older (75.5 years versus 72.6 years; $p = 0.0003$) and had a major height loss than women without vertebral fracture. Rachialgia intensity assessed by a visual analogical scale (0–100) was higher for women with vertebral fracture (64.8 versus 59.9; $p = 0.008$). 46% of women with vertebral fracture had had a history of a non-traumatic peripheral fracture against 32% for women without vertebral fracture ($p = 0.045$). For the 3 months before inclusion; the mean medical cost was 1207€ for patient with vertebral fracture (70% due to hospitalisations) against only 425€ for non-fracture woman. During the three months after inclusion, the mean cost of woman with vertebral fracture was 903€, nearly 3 times higher than the management cost of a non-fracture woman ($p = 0.024$). **CONCLUSION:** Our results show that the cost of women suffering from rachialgia depends on the aetiology. Rachialgia secondary to a vertebral fracture induce a higher medical consumption than rachialgia without spinal fracture. These preliminary results, that need to be confirmed, suggest that vertebral fracture, with no routine corrective treatment, is nevertheless a costly condition.

POS6

COST-EFFECTIVENESS OF MIACALCIC IN TREATMENT OF PAIN DUE TO OSTEOPOROTIC VERTEBRAL FRACTURE

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OBJECTIVES: Miacalcic was shown to be effective in reducing pain in patients with osteoporotic vertebral fracture (level of recommendation A). We performed cost-effective analysis of miacalcic in comparison to standard therapy with non-steroid anti-inflammatory drugs or analgetics in patients with osteoporotic vertebral fracture accompanied with back pain. **METHODS:** Subjects included 28 outpatient postmenopausal women with history of 1 to 5 vertebral fractures who presented with back pain. 14 pts were treated with miacalcic and 14—with standard therapy. The length of miacalcic treatment was 2 weeks, the length of follow-up was 3 months. Visual analog scale was used to assess pain and QUALEFFO-41 to measure quality of life. The direct and indirect costs of treatment were calculated. At the start the main clinical characteristics were similar in both groups. **RESULTS:** Miacalcic group showed shorter period of acute pain (7.6 days vs 15.8 days), lower VAS at 2nd week, better quality of life according to QUALEFFO-41, more patients free of pain (63% vs 32%), $P < 0.05$. Although direct costs were higher in miacalcic (4452 vs 847 rouble), indirect costs were lower than in controls (1325 vs 4421 rouble). **CONCLUSIONS:** Miacalcic is cost-effective in treatment of pain in vertebral fracture osteoporotic patients.